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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,208	12/28/2004	Risto Saarinen	4819-4734	9825
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MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101				
EXAMINER				
KERN, KEVIN P				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
03/13/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/520,208

Applicant(s)

SAARINEN ET AL.

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 1,3,13,16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-083)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In this instance, the abstract includes the legal terms "said", "comprising", and "means". In addition, "The invention relates to" and "The invention also relates to" are phrases that can be implied. Appropriate corrections are required.

2. The abstract of the disclosure is objected to because "Fig. 1" below the abstract should be deleted. Correction is required. See MPEP § 608.01(b).
3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.

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- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

In this instance, the specification lacks section headings.

4. The disclosure is objected to because of the following informalities: on page 2, lines 13-15, reference to claims in the specification should be removed, and cancellation of these lines is suggested. Appropriate correction is required.

Claim Objections

5. Claims 1, 3, 13, 16, and 17 are objected to because of the following informalities: in claim 1, 3rd line, delete "-" after "housing". In claims 1 and 17, 4th lines of both claims, delete "the" before both "circulation" and "cooling" to obtain proper antecedent basis. In claims 3 and 13, 2nd lines of both claims, add "," after "element" for clarity. In claim 16, 2nd line, add "," after "junction" for clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to independent claims 1 and 17, it is unclear whether or not the limitation "lining elements" or "lining element" is intended, as the applicants are using both limitations throughout these claims. Correction and/or clarification are required.

With regard to independent claims 1 and 17, it is unclear what structure the limitation "means for connecting them together" is referring to. It is believed that these "means" are the tongue-in-groove connections between housing 2 and lining element(s)

4. Correction and/or clarification are required.

Claim 15 recites the limitation "the junctions". There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the junction". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cordier et al. (US 4,437,651) in view of Korbik et al. (US 6,843,958).

Cordier et al. disclose a cooling element and a method for manufacturing the cooling element to be used in a furnace, such that the cooling element (cooling plate 1) comprises a housing in which is formed a channel system 6 for circulating cooling fluid, and lining elements (inserts 12) made of a fireproof material, such that the housing and lining elements 12 include means for connecting them together (longitudinal and transverse grooves 10,11), and bracket-like edge parts that fit in the groove arranged in the housing from the groove bottom towards the surface of the housing (abstract; column 1, lines 5-65; column 2, lines 8-68; column 3, lines 1-19; and Figures 1 and 2). Although Cordier et al. fail to teach that the housing is made of copper and the

dimensions of the groove, Cordier et al. disclose that the housing is made of iron (also a highly conductive material). Therefore, substituting iron with copper would have been obvious to one of ordinary skill in the art, since both materials are highly conductive and choosing one over the other would have been merely a design choice. Furthermore, the dimensions of the groove would have been obvious to one of ordinary skill in the art, since this depends on the size of the liner to place therein. Therefore, the size of the groove is dependent to the type of liners. Cordier et al. do not disclose a single piece copper housing, as well as the lining element(s) being movable in a vertical direction in response to thermal expansion during operation of the furnace.

However, Korbik et al. disclose a metallurgical furnace comprising a casing of the furnace and the outer casing plate; a single-piece cooling plate 10 forming a housing made of copper provided inward of the outer furnace casing plate 15; a cooling passage with holding pipes 16 thereon which lead to the outside through the furnace casing plate with fastening elements (11,12); and lining elements that are movable both horizontally and vertically in response to thermal expansion during operation of the furnace, such that these features are advantageous for allowing for thermal expansion between contacting areas of plates (10,15) having differing thermal expansion coefficients adjacent fastening elements, thus reducing thermal stress (abstract; column 1, lines 4-13; column 2, lines 18-67; column 3, lines 1-23 and 39-67; column 4, lines 1-22; and Figures 1-4).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify the cooling element and the method for

manufacturing the cooling element to be used in a furnace, as disclosed by Cordier et al., by using the single piece copper housing, as well as the lining element(s) being movable in a vertical direction in response to thermal expansion during operation of the furnace, as taught by Korbik et al., in order to allow for thermal expansion between contacting areas of plates having differing thermal expansion coefficients adjacent fastening elements, thus reducing thermal stress (Korbik et al.; abstract; column 2, lines 56-67; column 3, lines 1-11 and 63-67; and column 4, lines 1-4).

Response to Arguments

11. The examiner acknowledges the applicants' amendment provided with the request for continued examination received by the USPTO on December 20, 2007. Upon review, new objections to the abstract, specification, and claims, as well as new 35 USC 112, 2nd paragraph rejections, are raised in above sections 1-7. Claims 1-18 remain under consideration in the application.

12. Applicants' arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is

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(571)272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns
Primary Examiner
Art Unit 1793

/Kevin P. Kerns/
Primary Examiner, Art Unit 1793
February 22, 2008